

PATENT ABSTRACTS OF JAPAN

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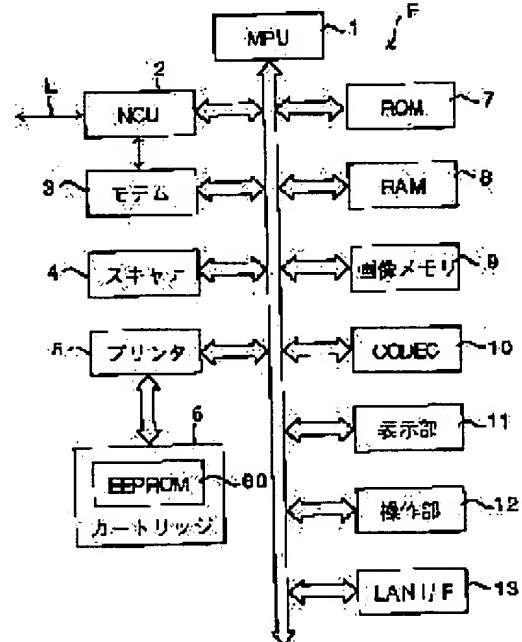
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(54) IMAGE FORMING APPARATUS

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an image forming apparatus capable of judging a cartridge as the unusable one even when the used cartridge is illicitly obtained and repacked with content so as to be sold.

SOLUTION: The cartridge 6 is equipped with a storage means 60 stored with a specified code, and when the cartridge 6 is loaded, the specified code is read out from the storage means 60. If it coincides with the previously registered code, the cartridge 6 is judged as the usable one. Then, the specified code is erased from the storage means 60 when the life of the cartridge 6 ends.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to amelioration of the image formation equipment which made cartridges, such as a toner cartridge and a process cartridge, removable.

[0002]

[Description of the Prior Art] Conventionally, with image formation equipments, such as facsimile apparatus, various cartridges, such as a toner cartridge and a process cartridge, are made removable.

[0003]

[Problem(s) to be Solved by the Invention] By the way, since it becomes impossible to guarantee the print in high definition when the cartridge of the so-called pirate edition which is not an original manufacturer's product is circulating in the commercial scene and the cartridge of such a pirate edition is used for it, in order to solve this, if a normal code is read from the memory of the cartridge when the memory which wrote the original manufacturer code in the cartridge is prepared and the body of equipment is equipped with a cartridge, what judges the cartridge to be an original manufacturer's product, and is made usable is developed.

[0004] However, the pirate edition contractor received the cartridge of a toner piece, when a toner was repacked and sold to it, in spite of a pirate edition, it was judged as the original manufacturer's product and there was a problem which becomes usable.

[0005] This invention is proposed in order to solve such a problem, it receives a used cartridge unjustly, and even if it packs and sells contents to it, it aims at offering the image formation equipment which can be judged to be impossible using the cartridge.

[0006]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, when a cartridge is made usable when in agreement with the code which read the predetermined code from the storage means when the cartridge was equipped with the storage means which memorized the predetermined code and it equipped with this cartridge, and was registered beforehand and the life of a cartridge comes by the image formation equipment of this invention according to claim 1, a predetermined code is eliminated from a storage means.

[0007] With image formation equipment according to claim 2, the predetermined information about the life of a cartridge is memorized by the storage means with the predetermined code, and the life of the cartridge with which it was equipped is judged for it based on this predetermined information.

[0008] With image formation equipment according to claim 3, when the code which read the predetermined code from the storage means when it equipped with a cartridge is not in agreement with the code registered beforehand, suppose that use of the cartridge is impossible.

[0009]

[Embodiment of the Invention] Below, the gestalt of operation of this invention is explained with a drawing. Drawing 1 is drawing showing an example of the important section configuration of the image formation equipment of this invention.

[0010] In addition, as image formation equipment, although the configuration of facsimile apparatus F is shown, in this invention, not to be restricted to this example, but what is necessary is [here,] just removable equipment about various cartridges, such as a toner cartridge and a process cartridge.

[0011] MPU1 by which this facsimile apparatus F controls this facsimile apparatus F, NCU2 which carries out connection control to the telephone line L, and the modem 3 which carries out the strange recovery of the various signals required for facsimile communication, The scanner 4 which reads image data in the set manuscript, and the printer 5 which prints the image data which carried out facsimile reception or, which was read with the scanner 4, The various cartridges 6, such as a toner cartridge and a process cartridge, ROM7 which memorized various programs required for this facsimile apparatus F to operate etc., RAM8 which memorized abbreviated dialing etc., and the image memory 9 which carries out the temporary storage of the image data, It has the codec 10 which encodes or decodes image data, the display 11 which consists of liquid crystal screens etc., the control unit 12 which consists of various actuation keys etc., and the LAN interface 13 for connecting this facsimile apparatus F to LAN.

[0012] The cartridge 6 is equipped with EEPROM60 which constitutes a storage means, and a predetermined code and the information about the life of a cartridge 6 are registered into this EEPROM60 possible [rewriting]. In addition, a flash memory may be used instead of EEPROM60.

[0013] Here, as a predetermined code, there are codes, such as an original manufacturer code and a serial number, and there are print number of sheets using the cartridge 6 as information about a life, number of sheets using the cartridge 6 which can be printed.

[0014] According to such a configuration, processing shown in the flow chart of drawing 2 can be carried out. When it equips with a cartridge 6, to Equipment F Namely, (100), Code read-out processing from EEPROM60 of the cartridge 6 is carried out (101). If the code is in agreement with the code beforehand registered into equipment (102), from EEPROM60, it will read, the information about a life, for example, the count which can be printed, of the cartridge 6 with which it equipped, (103), and the print using the cartridge 6 will be permitted (104).

[0015] On the other hand, when a code is not in agreement, by the display by (102) and the display 11, he is urged to use the cartridge 6 of an original manufacturer's product (105), and the print using the cartridge 6 is forbidden (106).

[0016] Moreover, this facsimile apparatus F carries out processing shown in the flow chart of drawing 3 based on the number-of-sheets information which was read by processing of step 103 of point ** and which can be printed.

[0017] That is, from the read number-of-sheets information which can be printed, if the print number of sheets using a cartridge 6 has reached predetermined number of sheets (200), by the display by the display 11, exchange of a cartridge 6 will be urged (201) and the code of EEPROM60 will be eliminated (202).

[0018] Since such processing is carried out, even if a pirate edition contractor receives the cartridge 6 to which the life came, since a code cannot be read when Equipment F is equipped even if it fills up with and sells contents to this, since the code is eliminated, the print using the cartridge 6 is not made in the EEPROM60. Therefore, it can prevent beforehand that the cartridge 6 of a pirate edition circulates, and the print of high quality using the cartridge 6 of an original manufacturer's product can be promoted.

[0019] In addition, the code of EEPROM60 is not restricted only for eliminating, but may completely be rewritten to another code. At the time of wearing of a cartridge 6, if it carries out like this, since the rewritten code is read, it will not be in agreement with the code registered into Equipment F, and it will become impossible to use the cartridge 6.

[0020]

[Effect of the Invention] So that he can understand also from the above explanation with the image formation equipment of this invention according to claim 1 When the predetermined code was read from the storage means, a cartridge is made usable when in agreement with the code registered beforehand when it equips with a cartridge, and the life of a cartridge comes Since [to which the life came / the pirate edition contractor / since the predetermined code was eliminated from the storage means] the code is eliminated with the storage means even if it carries out cartridge acquisition, Since a code cannot be read when equipment is equipped even if it fills up with and sells contents to this, the print using the cartridge is not made. Therefore, it can prevent beforehand that the cartridge of a pirate edition circulates, and the print of high quality using the cartridge of an original manufacturer's product can be promoted.

[0021] With image formation equipment according to claim 2, the predetermined information about the life of a

cartridge is memorized with the predetermined code, since the life of the cartridge with which it was equipped is judged based on this predetermined information, whenever it equips equipment with a cartridge, that life can be judged for a storage means, and suitable processing can be carried out to it.

[0022] With image formation equipment according to claim 3, when the code which read the predetermined code from the storage means when it equipped with a cartridge is not in agreement with the code registered beforehand, since use of the cartridge is impossible, use of the cartridge of a pirate edition which is not an original manufacturer's product can be prevented beforehand.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is drawing showing an example of the important section configuration of the image formation equipment of this invention.

[Drawing 2] It is a flow chart for explaining actuation of the image formation equipment of this invention.

[Drawing 3] It is a flow chart for explaining actuation of the image formation equipment of this invention.

[Description of Notations]

F ... Facsimile apparatus

6 ... Cartridge

60 ... EEPROM

[Translation done.]

